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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/415,654	10/12/1999	DAVID LOWELL MCNEELY	RCA89830	5129

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EXAMINER	
WILLIAMS, LAWRENCE B	
ART UNIT	PAPER NUMBER

2634

DATE MAILED: 03/14/2003

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#11

Please find below and/or attached an Office communication concerning this application or proceeding.

Event	DA
Deadline	14/06/03
Entered	R 20/03/03

**Office Action Summary**

Application No.

09/415,654

Examiner

Lawrence B Williams

Applicant(s)

MCNEELY, DAVID LOWELL

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on amendment filed on 21 February 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18 and 19 is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 7 and 14-16 is/are rejected.
- 7) ☒ Claim(s) 5, 8-13 and 17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892).
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

**DETAILED ACTION*****Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 6 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Chiang (US Patent 5, 535, 150).

(1) With regard to claim 1, Chiang discloses in Fig. 3, a digital filter (300) for filtering sampled data, comprising; a delay network for delaying input data to provide a plurality of delayed sampled data output (col. 4, lines 26-30); a filter network representable by a decomposed coefficient weighting matrix for processing said delayed sampled data outputs (col. 3, lines 18-31); and a processor for producing a weighted product summation of said delayed sampled data outputs and said coefficient weighting matrix (col. 7, lines 45-63).

(2) With regard to claim 6, claim 6 inherits all limitations of claim 1. Furthermore, Chiang also discloses wherein the decomposed coefficient matrix represents a multiple input, multiple output, filter network (col. 4, lines 42-45).

(3) With regard to claim 14, claim 14 inherits all limitations of claim 1.

*Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 3, 4, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiang (US Patent 5, 535, 150) as applied to claim 1 above, and further in view of Feig et al. (US Patent 5, 909, 254).

(1) With regard to claim 2, claim 2 inherits all limitations of claim 1. As noted above, Chiang discloses all limitations of claim 1. Chiang does not however explicitly disclose, wherein the decomposed coefficient-weighting matrix comprises a structurally factored matrix.

However, Feig et al. teaches a structurally factored matrix (col. 3, lines 55-57).

One skilled in the art would have clearly recognized that a structurally factored matrix is also a well-known technique introduced in many references. Therefore it would have been obvious to one skilled in the art at the time of invention to incorporate the methods as taught by Feig et al. to the invention of Chiang to decrease the complexity of the filter (col. 3, lines 58-61).

(2) With regard to claim 3, Feig et al. also teaches said structurally factored matrix employs a factor derived based on a property including at least one of, (a) coefficient matrix row symmetry, and (b) coefficient matrix column symmetry (col. 3, lines 56-58).

(3) With regard to claim 4, claim 4 inherits all limitations of claims 1 and 3. **See above.**

(4) With regard to claim 15, claim 15 inherits all limitations of claims 14 and 3.

(5) With regard to claim 16, claim 16 inherits all limitations of claims 14 and 4.

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chiang (US Patent 5,535,150) as applied to claim 1 above, and further in view of Arbeiter et al. (US Patent 6, 295, 322 B1).

As noted above, Chiang discloses all limitations of claim 1. Chiang does not however disclose an interpolation network for interpolating sample data to provide input sample data.

However, Arbeiter et al. teaches in Fig. 7, an interpolation network for interpolating sample data to provide input sample data.

One skilled in the art would have clearly recognized that an interpolation network for interpolating sample data to provide input sample data is a well-known technique introduced in many references. Therefore it would have been obvious to one skilled in the art at the time of invention to incorporate the methods as taught by Arbeiter et al. to the invention of Chiang to as a method on increasing the resolution of the sampled data.

***Allowable Subject Matter***

6. Claims 18, 19 are allowed.

7. Claims 5, 8-13; 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence B Williams whose telephone number is 703-305-6969. The examiner can normally be reached on Monday-Friday (7:00-6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

Lawrence B. Williams

lbw  
March 7, 2003

  
**STEPHEN CHIN**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2600**